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[54] **DEVICE FOR MONITORING THE
AIR-PRESSURE IN PNEUMATIC TIRES
FITTED ON VEHICLE WHEELS**

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200/61.22**

[58] **Field of Search** 340/447, 445,
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[56] **References Cited**

U.S. PATENT DOCUMENTS

3,873,965 3/1975 Garcia 340/447
4,163,208 7/1979 Merz 340/447
4,237,728 12/1980 Betts et al. 340/447

4,319,220 3/1982 Pappas et al. 340/447
4,695,823 9/1987 Vernon 340/447
4,734,674 3/1988 Thomas et al. 340/447
4,970,491 11/1990 August Saint et al. 340/447
4,978,941 12/1990 Brown 340/447
5,001,457 3/1991 Wang 340/447
5,109,213 4/1992 Williams 340/447
5,218,861 6/1993 Brown et al. 340/445
5,228,337 7/1993 Sharpe et al. 340/445
5,285,189 2/1994 Nowicki et al. 340/447

FOREIGN PATENT DOCUMENTS

3929316A1 3/1991 Germany .
3930479A1 3/1991 Germany .

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[57] **ABSTRACT**

A device for monitoring the air pressure in pneumatic tires comprises a transmitting device fitted to each wheel of a vehicle and rotating with it, and a receiver which is built into the vehicle or accommodated in a separate housing. The transmitting device mounted in the wheel comprises a pressure gauge for measuring the tire pressure, a transmitter and a signal generator which generates an identification signal unique to each transmitter and transmitted before or after the pressure signal. The receiver processes received signals only when the identification signal received matches a reference identification signal stored in the receiver. This facilitates reliable operation of the monitoring device and prevents false alarms.

21 Claims, 5 Drawing Sheets

